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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/262,912	03/05/99	VUORINEN	T 30-497

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EXAMINER

ALVO, M

ART UNIT

PAPER NUMBER

1731

DATE MAILED:

09/18/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/262,912

Applicant(s)
VUORINEN et al

Examiner
Steve Alvo

Group Art Unit
1731



☐ Responsive to communication(s) filed on _____.

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-20 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-20 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 5

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 9-12, 14 and 15 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over WO 91/05909.

WO 91/05909 teaches bleaching kraft pulp in a first chlorine dioxide bleaching step for a time of 5 minutes at a temperature of 85°C a pH maintained between 6.0 and 7.5 (e.g. over 4.0), then adding acid to reduce the pH to 3.8 and bleaching in a second chlorine dioxide step at a temperature of 85°C, See WO 91/05909, page 8, line 23- page 9, line 15. If WO 91/05909 does not teach the exact claimed conditions then such would have been obvious to the routineer to optimize the bleaching. For example, it is known that higher temperature decrease the bleaching time required to obtain a certain brightness. Thus it would have been obvious to one of ordinary skill in the art that at in the first stage of WO 91/05909 when using the highest disclosed (85°C)

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temperature to use the shortest reaction time (5 minutes). WO 91/05909 teaches using sequences which include a second chlorine dioxide stage. See Tables 1-3 of WO 91/05909 for chlorine dioxide dosage of 0.5-1.5% in the first chlorine dioxide stage and 0.5 to 2.0% in the second stage.

Claim 2-5, 7, 8, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 91/05909 as applied to claim 1 above, and further in view of VUORINEN et al.

WO 91/05909 teaches maintaining the pH during the first step between 6.0 and 7.5 (over 5.0). VUORINEN et al teaches that hexenuronic acids react with the ene functionality of hexenuronic acid groups and that this can be prevented by converting the hexenuronic acid groups to 2-furoic plus formic acids and 5-carboxy-2-furaldehyde through acid hydrolysis. It would have been obvious to improve the brightness stability of the pulp of WO 91/05909 by removing the hexenuronic acids by performing an acid hydrolysis in the manner taught by VUORINEN et al.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 91/05909 in view of VUORINEN et al as applied to claim 4 above, and further in view of HISTEAD et al.

HISTEAD et al teaches using chlorine dioxide bleaching times decrease at higher temperatures (see section on page 41 (T36) under Table I) and teaches at 80°C that a reaction time of 2 minutes can be used. It would have been obvious to use the 2 minute reaction time of HISTEAD et al for the first step of WO 91/05909.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 91/05909 as applied to claim 1 above, and further in view of HISTEAD et al.

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HISTEAD et al teaches using chlorine dioxide bleaching times decrease at higher temperatures (see section on page 41 (T36) under Table I) and teaches at 80°C that a reaction time of 2 minutes can be used. It would have been obvious to use the 2 minute reaction time of HISTEAD et al for the first step of WO 91/05909.

Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 91/05909 in view of VUORINEN et al as applied to claim 4 above, and further in view of CARLES et al.

It would have been obvious to one of ordinary skill in the art to use chlorine dioxide temperatures of up to 90°C during the chlorine dioxide bleaching steps of WO 91/05909 as such is taught by CARLES et al. It would have been obvious to perform the bleaching and acid adjusting steps in inlet lines and/or reactors as such is taught by WO 91/05909, e.g. initial D step in inlet line reacted in upflow reactor and/or J or U tube, acid added to reactor and/or J or U tube outlet line and last chlorine dioxide step occurs in downflow reactor.

Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant refers to step (a) as the first chlorine dioxide step, step (b) would be the second chlorine dioxide step. Such should be clarified. Claims 7 and 14 call for a second chlorine dioxide step after step (b), this would be a second chlorine dioxide stage as step (b) would be the second

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chlorine dioxide step. Claims 8, 15 and 17-20 are confusing as there are more than one "second" chlorine dioxide steps. Step (b) of claim 1 and step (c). Clarification is required.

When filing an "Official" FAX in Art Unit 1731, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file. The "Official" FAX phone number for this Art Unit is (703) 305-7718 for all papers except amendments after final, for amendments after final the FAX number is 703-305-3599. When filing an "Unofficial" FAX in Group 1730, please indicate in the Header (upper right) "Unofficial" for Draft Documents and other Communications with the PTO that are not for entry into the file of the application. This will expedite processing of your papers. The "Unofficial" FAX phone number for this Art Unit (1731) is (703) 305-7115.

Any inquiry concerning this communication or earlier communications from the **primary examiner** should be directed to **Steve Alvo** whose telephone number is (703) 308-2048. The Examiner can normally be reached on Monday - Friday from 6:30 AM - 3:00 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Stanley Silverman, can be reached on 703-308-3837.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **Group receptionist** whose telephone number is (703) 308-0661.

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STEVE ALVO
PRIMARY EXAMINER
ART UNIT 1731

MSA
September 13, 2000